

METHOD AND APPARTUS FOR IMPLEMENTING A FULLY DYNAMIC LOCK- FREE HASH TABLE

ABSTRACT

One embodiment of the present invention provides a system that implements a hash table that is fully dynamic and lock-free. During a lookup in the hash table the system first uses a hash key to lookup a bucket pointer in a bucket array. Next, the system follows the bucket pointer to a data node within a linked list that contains all of the data nodes in the hash table, wherein the linked list contains only data nodes and at most a constant number of dummy nodes. The system then searches from the data node through the linked list to locate a node that matches the hash key, if one exists.